

CORRECTED VERSION

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
14 July 2005 (14.07.2005)

PCT

(10) International Publication Number  
WO 2005/064872 A1

(51) International Patent Classification<sup>7</sup>: H04L 25/52,  
H04B 7/14, H04Q 7/32

(74) Agents: ELFVING, Inger et al.; Ericsson AB, Patent Unit  
Radio Networks, S-164 80 Stockholm (SE).

(21) International Application Number:  
PCT/SE2004/002018

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(22) International Filing Date:  
23 December 2004 (23.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0303602-7 30 December 2003 (30.12.2003) SE

(71) Applicant (for all designated States except US): TELE-  
FONAKTIEBOLAGET LM ERICSSON (PUBL)  
[SE/SE]; S-164 83 Stockholm (SE).

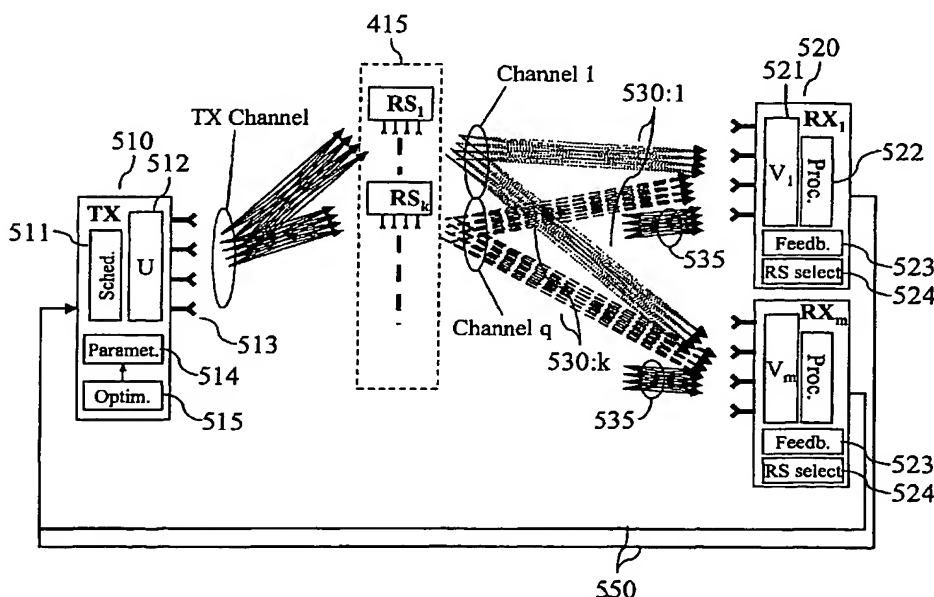
(72) Inventor; and

(75) Inventor/Applicant (for US only): LARSSON, Peter  
[SE/SE]; Ballongatan 2, S-169 71 Solna (SE).

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR WIRELESS COMMUNICATION NETWORKS USING COOPERATIVE RELAYING



(57) Abstract: The present invention relates to relay supported wireless communication to enhance communication performance. In the wireless communication system according to the invention neighboring relay stations are arranged with substantially overlapping coverage. In the method according to the invention mobile stations makes soft association to relay stations. The mobile stations feed back the selection of relay stations and channel quality measures to the base station. The base station adapts the transmission to the relay stations based on each mobile stations reported soft associations and channel quality measures. In this way the control signaling to and from the relay stations can be very limited.

WO 2005/064872 A1



**Declaration under Rule 4.17:**

— *of inventorship (Rule 4.17(iv)) for US only*

**Published:**

— *with international search report*

**(48) Date of publication of this corrected version:**

18 August 2005

**(15) Information about Correction:**

see PCT Gazette No. 33/2005 of 18 August 2005, Section II

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*